

**Proposed Amendments to the Claims:**

1. (Amended) A modular apparatus for integrating mobile computing device features with a wireless communication device, the apparatus comprising:

a handheld information input/output device;

a handheld wireless communication device having an information processing module; and

a universal joint with mechanical latch positions rotatably attaching the information input/output device to the wireless communication device—~~at the universal joint,~~ wherein the universal joint accommodates rotation of the information input/output device about two axes relative to the wireless communication device, the universal joint allowing separation of the information input/output device from the wireless communication device, whereby, when the information input/output device and the wireless communication device are connected, the information input/output device interacts with the information processing module to integrate mobile computing features with the wireless communication device.

18. (Amended) An integrated computing wireless communication apparatus for integrating mobile computing device features with a wireless communication device, the apparatus comprising:

a handheld information input/output device having a display presenting an output image and an input device, the output image having an orientation based upon selection of single-hand input into the input device;

a cellular telephone module having an information processing module; and

a universal joint with mechanical latch positions connecting the handheld information input/output device to the cellular telephone module, wherein the universal joint accommodates rotation of the information input/output device about two axes relative to the cellular telephone module, wherein the universal joint allows separation of the information input/output device from the wireless communication device and latches in at least one

position fastening the cellular telephone module to and in a relative position to the handheld information input/output device to allow a user to hold with one hand both devices and input information with the same hand, whereby, when the handheld information input/output device and the cellular telephone module are connected at the universal joint, the handheld information input/output device interacts with the information processing module to integrate mobile computing features with the cellular telephone module.

24. (Amended) An integrated computing wireless communication apparatus comprising:

- a handheld mobile computing device having an input device inputting information and a display presenting output;
- a handheld wireless communication device; and
- a universal joint with mechanical latch positions rotatably connecting the handheld mobile computing device to the handheld wireless communication device ~~at the universal joint~~, wherein the universal joint accommodates rotation of the mobile computing device about two axes relative to the wireless communication device, the universal joint allowing separation of the handheld mobile computing device from the handheld wireless communication device such that each device may be used independently of the other device, whereby the connection at the universal joint integrates the handheld mobile computing device and the handheld wireless communication device into a modular two-body apparatus.

# Universal joint

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A **universal joint** or **U joint** is a joint in a rigid rod that allows the rod to 'bend' in any direction. It consists of a pair of ordinary hinges located close together, but oriented at 90° relative to each other.

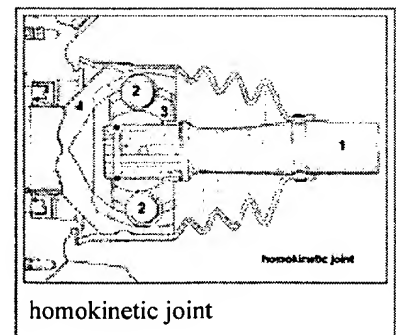
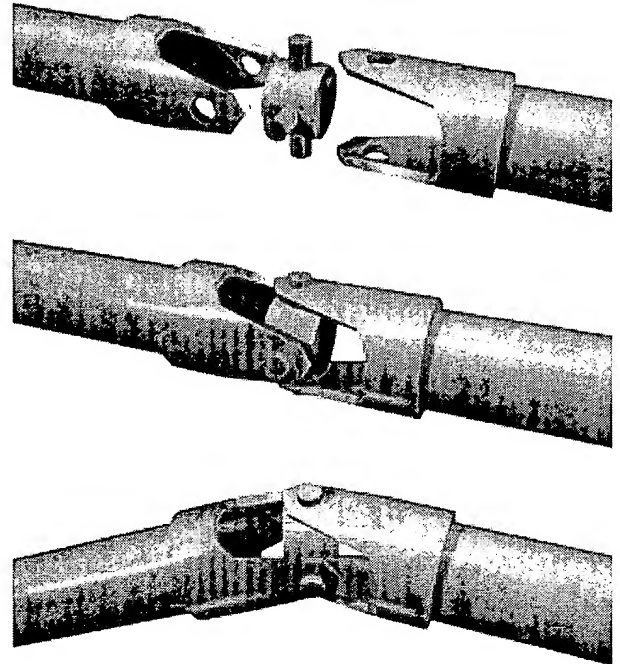
Universal joints are common wherever a drive shaft needs to turn a corner; a drive shaft with a universal joint can freely rotate through the universal joint, and no gears are required to couple the two ends. The most obvious example of this application of a universal joint is in the drive shaft of automobiles.

However, when the two shafts are at an angle other than 180°, the driven shaft does not rotate with the same uniform speed as the drive shaft; the more the angle goes toward 90° the jerkier the movement gets (clearly, when the angle is 90° the shafts would even lock).

To prevent the jerky rotation of the axle or drive shaft there usually are two U-joints in a three part shaft assembly. The second U-joint will convert the jerky movement back to an even, uniform speed of the third shaft.

Another way to prevent jerky movement is to use a Constant Velocity (CV) or 'homokinetic' joint ('homo' meaning 'same', 'kinetic' meaning 'movement' or motion). A homokinetic joint has the same function as a U joint but is constructed with a cage and steel balls moving in grooves, inside a 'dome' (see picture).

1. drive shaft from the transmission,
2. steel balls (in this case 6) in a 'cage'. The balls run in grooves in the dome.
3. cage, splined to the driveshaft
4. spherical 'dome' and outer driveshaft, part of the hub of the wheel.



## History

The concept of the universal joint is based on the design of gimbals, which have been in use since antiquity. The first person known to have suggested its use for transmitting motive power was Girolamo Cardano, an Italian mathematician, in 1545, although it is unclear whether he produced a working model. In Europe, the device is often called the *Cardan joint* or *Cardan shaft*. Robert Hooke produced a working universal joint in 1676, giving rise to an alternative name, the *Hooke's joint*. It was the American car manufacturer Henry Ford who gave it the name *universal joint*.

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